

REMARKS

In view of the above amendments and the following remarks, reconsideration and allowance of this application are respectfully requested. Claims 1-24 are pending in this application, with claims 1 and 18 being independent. Claims 1 and 5 have been amended. Support for the amendments is found at least at page 4, lines 21-23 and page 5, lines 7-8. Attached is a marked-up version of the changes being made by the current amendment.

The Examiner has rejected claims 1, 2 and 5-22 as anticipated by Shiber (U.S. 5,334,211), and claim 3 as obvious over Shiber. Applicant respectfully requests reconsideration and withdrawal of these rejections.

As amended, claim 1 is directed to a cutting instrument including an outer member having a cutting edge and a helical knife coupled to the outer member for rotation relative to the outer member. At least a portion of the helical knife has an edge configured to cut into tissue and extends distally beyond the cutting edge of the outer member.

Shiber, on the other hand, does not describe or suggest a helical knife with an edge configured to cut into tissue. Instead, Shiber describes a helical wire that is placed over a guide wire during an atherectomy. The helical wire has a trapezoidal cross-section configured such that the outer side of the wire is rounded or blunted. See, e.g., Shiber, figure 3. Thus, the edge of Shiber's helical wire is not configured to slice into tissue. In fact, if the outer side of Shiber's helical wire were configured to slice tissue, it would undesirably present a danger to the tissue of the vessel walls during the atherectomy. Consequently, Shiber does not describe or suggest a helical knife with an edge configured to cut into tissue, as recited in amended claim 1.

Applicant submits that claim 1, and the claims that depend therefrom, are patentable over Shiber for at least this reason.

Claim 18 is directed to a method of cutting that comprises slicing into tissue with a helical knife to draw tissue proximally toward a cutting portion and cutting the tissue with the cutting portion.

Shiber does not describe or suggest slicing into tissue with a helical knife to draw the tissue proximally toward a cutting portion and cutting the tissue with the cutting portion. Rather, Shiber describes a helical wire used during an atherectomy to hold an obstruction in place. The

helical wire is threaded – not sliced – onto the obstruction, and a helical void of the helical wire “serves to hold the obstruction material during the atherectomy.” Shiber, col. 4, lines 11-13. In Shiber, while the helical wire holds the obstruction material, a catheter with a cutting blade is slid over the helical wire to cut away the obstruction. See, e.g., Shiber, col.6, lines 17-18. Thus, in Shiber’s method, tissue is not sliced into by a helical knife to draw the tissue proximally towards a cutting portion, as claimed. Shiber’s wire neither slices tissue nor draws tissue proximally.

Applicant submits that claim 18, and claims 19-22 that depend therefrom, are patentable over Shiber for at least this reason.

The Examiner has rejected dependent claims 4 and 23-24 as obvious over Shiber in view of Varsseveld (U.S. 6,068,641). Applicant respectfully requests reconsideration and withdrawal of these rejections. Even if it would have been obvious to combine Shiber with Varsseveld, which Applicant does not concede, such a combination would not result in the Applicant’s claimed invention. Varsseveld does not overcome the deficiencies noted above in Shiber with respect to claims 1 and 18. In particular, Varsseveld does not describe or suggest a helical knife with an edge configured to slice into tissue (claim 1) or slicing into tissue with a helical knife to draw the tissue proximally towards a cutting portion (claim 18). As such, applicants submit that claims 4 and 23-24 are patentable over Shiber in view of Varsseveld for at least the reasons discussed above.

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Applicant asks that all claims be allowed. Please apply any other charges or credits to
Deposit Account No. 06-1050.

Respectfully submitted,

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Version with markings to show changes made

In the claims:

Claims 1 and 5 has been amended as follows:

1.(Once Amended) A cutting instrument, comprising
an outer member having a cutting edge; and
a helical knife coupled to the outer member for rotation relative to the outer member, at
least a portion of the helical knife having an edge configured to slice into tissue and extending
distally beyond the cutting edge of the outer member.

5.(Once Amended) The instrument of claim 1 wherein the edge comprises a helical
edge and the helical knife includes [a helical edge and] a helical channel.